NOTE ON THE SEA ANEMONE, SAGARTIA PAGURI VERRILL.

By J. Playfair McMurrich,
Of the University of Michigan.

In 1869 Verrill described briefly an actinian obtained by Stimpson in the China Sea, where it was found adherent to the chela of the pagurid *Diogenes edwardsii* (De Haan). It had been termed in manuscript by Stimpson *Carcinophilus paguri*, but Verrill correctly, though evidently with some doubt, referred it to the genus *Sagartia*.[a]

Specimens of *Diogenes edwardsii* collected by Messrs. Jordan and Snyder at Wakanoura, Kii, Japan, and now in the National Museum, bore upon the larger chela and also upon the shell which they inhabited an actinian, specimens of which were sent me for identification by the U. S. National Museum. They proved to be the species described by Verrill, and since the original description contains no details regarding the anatomical characteristics, it has seemed advisable to make a brief statement concerning these.

The base is adherent, broader than the column and thin; no definite chitinous membrane, secreted by the base, was observed. The column is low, forming in the contracted specimens a low dome, or in the more expanded individuals a short cylinder. The walls are destitute of tubercles or verrucæ and showed on surface view no indications of cinclides, although Verrill was able to distinguish these structures in the individuals he examined, stating that "openings, which appear to be cinclides, are sparingly scattered over the surface, arranged in imperfect rows." They are undoubtedly present, since I observed one in sections of the column wall; it had an acontium lying in it and seemed to be an ectodermal invagination.

The margin is smooth and there is no fosse. The tentacles are slightly exposed in all the specimens; they are short and conical and about ninety-six in number.

Verrill describes the coloration of Stimpson's specimens to have

[a] A. E. Verrill, Synopsis of the Polyps and Corals of the North Pacific Exploring Expedition, under Commodore C. Ringgold and Capt. John Rodgers, U. S. Navy, from 1853–1856. Collected by Dr. William Stimpson, Naturalist to the Expedition. Proc. Essex Inst., VI, 1869.

been "pale orange, in contraction cream colored above, brown below. Tentacles pale, annulated with two or three gray rings; inside blackish." In the present specimens the color is a uniform dark chocolate brown. In the endoderm of the tentacles granules of dark brown pigment occur, arranged in a characteristic manner. They form two streaks, varying in breadth, situated either one on each side of the median line of the oral surface of the tentacle (fig. 1) or else along its lateral surfaces, and they seem to vary somewhat in breadth. This arrangement corresponds with Verrill's statement as to the blackish coloration of the inner surfaces of the tentacles, but I was not able to determine the existence of the gray rings which he mentions.

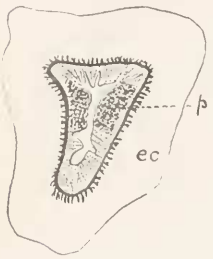

FIG. 1.—CROSS-SECTION OF TENTACLE OF *Sagartia paguri*; *ec*, ECTODERM; *p*, DARK BROWN PIGMENT IN ENDODERM.

The base of the largest individual measured 2.2 cm. in diameter and the height of the column (contracted) 0.5 cm.

The ectoderm of the column wall is thinner than the mesogloea, which on its outer surface is raised into numerous horizontal ridges. The circular musculature is rather feeble, but the sphincter is strong and of the form represented in fig. 2. The longitudinal muscles of the tentacles are moderately developed and are ectodermal in position (fig. 1).

The stomatodæum possesses two pairs of but moderately developed siphonoglyphs. The mesenteries are arranged hexamerously in four cycles with, in some individuals, occasional representatives of a fifth. The first and second cycles are perfect. The longitudinal muscles are well developed and end abruptly at their inner edges, while externally they taper gradually; the parietobasilars and basilars are feeble, and indeed hardly noticeable.

Reproductive elements were found only on the mesenteries of the third and fourth cycles. Acontia were present but were not abundant.

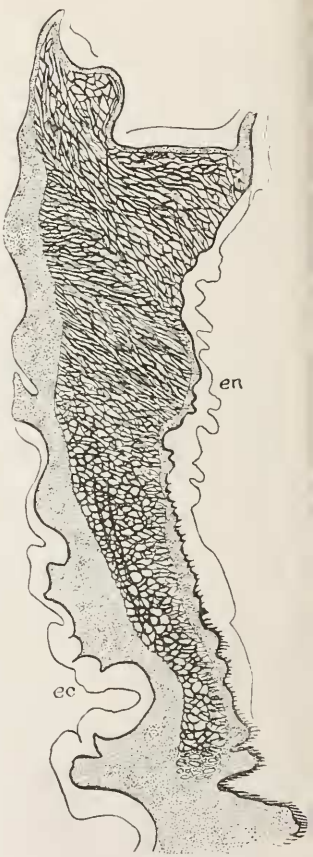

FIG. 2.—LONGITUDINAL SECTION OF COLUMN WALL OF *Sagartia paguri*, SHOWING SPHINCTER MUSCLES. *ec*, ECTODERM. *en*, ENDODERM.

The habits of this form suggest its reference to the genus *Adamsia*, but the arrangement of the mesenteries clearly indicates it as a member of the Sagartiinæ, and it is to be assigned to the genus *Sagartia*.